

Original citation:

Artz, Benjamin, Goodall, Amanda and Oswald, Andrew J. (2018) *Do women ask?* Industrial Relations: A Journal of Economy and Society. doi:[10.1111/irel.12214](https://doi.org/10.1111/irel.12214)

Permanent WRAP URL:

<http://wrap.warwick.ac.uk/99885>

Copyright and reuse:

The Warwick Research Archive Portal (WRAP) makes this work by researchers of the University of Warwick available open access under the following conditions. Copyright © and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable the material made available in WRAP has been checked for eligibility before being made available.

Copies of full items can be used for personal research or study, educational, or not-for profit purposes without prior permission or charge. Provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

Publisher's statement:

"This is the peer reviewed version of the Artz, Benjamin, Goodall, Amanda and Oswald, Andrew J. (2018) *Do women ask?* Industrial Relations: A Journal of Economy and Society. doi:[10.1111/irel.12214](https://doi.org/10.1111/irel.12214)

This article may be used for non-commercial purposes in accordance with [Wiley Terms and Conditions for Self-Archiving.](#)"

A note on versions:

The version presented here may differ from the published version or, version of record, if you wish to cite this item you are advised to consult the publisher's version. Please see the 'permanent WRAP URL' above for details on accessing the published version and note that access may require a subscription.

For more information, please contact the WRAP Team at: wrap@warwick.ac.uk

Do Women Ask?

2 March 2018

Benjamin Artz, Amanda H. Goodall, and Andrew J. Oswald[‡]

For *Industrial Relations: A Journal of Economy and Society*

Abstract

Females typically earn less than males. The reasons are not fully understood. This paper re-examines the idea that women ‘*don’t ask*’, which potentially assigns part of the responsibility for the gender pay gap on to female behavior. Such an account cannot readily be tested with standard data sets. This paper is the first to be able to use matched employer-employee data in which workers are questioned about their asking behaviour. It concludes that males and females ask equally often for promotions and raises. The paper’s empirical results suggest, however, that while women do now ask they ‘*don’t get*’.

Keywords: matched employer-employee data; female discrimination; wages; gender.

JEL codes: J31, J71

Acknowledgements: For many helpful suggestions, we thank the editor and two referees, and Linda Babcock, Paul Bain, Pat McGovern, and Paul Oyer

[‡] The authors’ affiliations are, respectively, University of Wisconsin at Oshkosh; Cass Business School, City University London, and IZA; University of Warwick, CAGE Research Centre and IZA.

Do Women Ask?

1. Introduction

This paper explores one of the famous puzzles of the modern workplace. Across the industrialized world, female workers typically earn less than their male counterparts. It is not completely understood why this pattern -- one consistent with the existence of gender discrimination -- persists.¹ The paper is able to draw upon an unusual form of survey evidence. Using new data, it revisits two ideas that have been put forward, in different forms, in writings in the industrial relations, psychology, social science, and labor economics literatures. They can be expressed in a simplified form as:

Idea 1. In certain circumstances, women may have a lower propensity than men to ask for pay raises and promotions;

Idea 2. Women may be reluctant to 'ask', because that might be viewed by their manager as pushy or "out of role" behavior for a female.

It seems important to try to assess these arguments. First, they assign part of the responsibility for gender differentials on to females and their own actions. Second, our approach allows us to probe whether there might have been a change in women's propensity to ask for a pay raise, since what is widely recognized as the seminal work of Babcock and Laschever (2003) in the monograph entitled *Women Don't Ask*.

These issues are important and live ones. In the recent words of Blau and Kahn (2017), p.843:

“Women’s lower propensity to negotiate over salaries, raises, or promotions, could reduce their pay relative to men’s. The observed gender difference could reflect social factors, including women being socialized to feel that they are being pushy or overbearing...”

In this paper we estimate econometric ‘asking’ equations. We use labor market data for the period 2013-14. In most survey data sets used by labor economists, it is intrinsically hard to assess Ideas 1 and 2. The reason is that the information gathered in conventional surveys is on people’s actual earnings (rather than on whether workers are ‘asking’) and on other objective aspects of workplaces (rather than on underlying psychological reasons and attitudes). This is probably why little formal testing of these ideas has been done on real-world field data.

There is substantial published evidence about the factors that help to explain variations in negotiating behavior between men and women. Three areas have attracted special attention: (a) the nature of the task being negotiated and the situation in which negotiation takes place, (b) whether negotiation over pay has been established as an explicit norm in the workplace or is ambiguous, and (c) personal facets, such as potentially lower confidence among women, and the identity costs of behaving “out of role”, because negotiating over economic factors can be viewed as an intrinsically male form of behavior (Heilman, 2001; Heilman and Okimoto, 2007; Niederle and Vesterlund, 2007; Kray and Gelfand, 2009; Inzlicht 2011; Sandberg, 2013; Leibbrandt and List, 2015; Mazei, Hüffmeier, Freund, Stuhlmacher, Bilke and Hertel, 2015). Early, and pioneering, work in this area was done by the psychologist Alice Eagly, as in Eagly (1987) and Eagly and Karau (2002).

A number of previous studies are particularly relevant. In an experimental setting, Bear and Babcock (2012) find no difference in gender negotiating performance when the product being negotiated is viewed as more ‘female’ (e.g. glass beads). However, when the product is perceived

as more ‘masculine’ (e.g. car headlights), men out-negotiate women. Although there is some evidence that men on average do better in economic negotiating situations, there is considerable empirical support for the fact that the context and the nature of the task can have a mediating influence (Mazei, Hüffmeier, Freund, Stuhlmacher, Bilke and Hertel, 2015). Furthermore, men are more likely than women to overestimate their abilities (Lichtenstein, Fischhoff and Phillips, 1982; Kay and Shipman, 2014), and this is also more pronounced when men undertake tasks that are considered to be masculine (Moore and Small, 2007). Other moderating factors favoring female negotiators include experience in negotiating (Zerres, Hüffmeier, Freund, Backhaus, and Hertel, 2013), knowing the bargaining range (Bowles and McGinn, 2008), and when advocating on behalf of another person in a negotiation (Amanatullah and Morris, 2010; Mazei, Hüffmeier, Freund, Stuhlmacher, Bilke and Hertel, 2015).

In a field experiment, Leibbrandt and List (2015) provide interesting and nuanced results. First, the authors find no difference between men and women in the special circumstance that workers are explicitly told that wage negotiation is permitted. When the “rules of wage determination” are left ambiguous, however, Leibbrandt and List conclude that men do tend to negotiate higher pay. The authors show that men prefer an ambiguous wage environment. When there is no explicit statement that wages are negotiable, females are more likely than males to signal their willingness to work for a lower wage rate.

A number of other factors appear to reduce women’s propensity to negotiate. Women who deviate from a perceived female stereotype, for example, can suffer what has been called “identity costs”, and, if behaving “out of role” (Heilman, 2001; Heilman and Okimoto, 2007; Inzlicht 2011), such as when negotiating, females may be less popular in professional life. The performance of individuals who belong to negatively stereotyped groups has been found to be lower (Schmader

and Johns, 2003). Ample evidence also demonstrates the effect of self-stereotypes and stereotype threats on the behavior of women. For example, girls' math performances decrease when their gender is made salient (Spencer, Steele and Quinn, 1999; Dar-Nimrod and Heine, 2006). The same is true for performance in competitions (Guenther et al., 2010). Female self-stereotypes appear to decrease women's proclivity to compete with men (Gupta and Bhawe, 2007). Niederle and Vesterlund (2007) show that the tournament-entry gap between males and females is mainly driven by women's preference not to compete due to negative self-stereotyping.

Bowles, Babcock and Lai (2007) demonstrate, in a number of laboratory experiments, that men penalize women who initiate salary negotiations; however, women penalize all participants when those participants initiate negotiations. The authors attribute their results to perceptions of 'niceness' and 'demandingness'. Females who adopt counter-stereotypical behavior can be accused of lacking in social skills. They then can suffer professionally when attention is diverted away from functional competence to social skills (Phelan, Moss-Racusin and Rudman, 2008). Amanatullah and Tinsley (2013) conclude that women are penalized when they behave in a way that can be viewed as overly masculine or overly feminine. The authors examine self-advocating female negotiators and those who negotiate on behalf of others. Women were shown in this study to be less liked when they assertively negotiated for themselves. However, if other-advocating women exhibit non-assertive behavior, they also suffer a backlash, and can be perceived as having low competence. The effects found for women negotiators are absent for males (Amanatullah and Tinsley, 2013).

It seems that women adapt their behavior -- in order to fit the context -- to advance their success in negotiating (Amanatullah and Morris, 2010). Additionally, women appear to know when it is efficacious to enter negotiations, and males experience less financial harm from

negotiating more (Exley, Niederle, and Vesterlund, 2017). A danger with stereotype-consistent behavior is that it may perpetuate stereotypes (Dar-Nimrod and Heine, 2006). Yet recent evidence suggests there may have been some positive movement. In being assessed as leaders, Bongiorno, Bain and David (2014) find that assertive women are viewed as being as likeable and influential as assertive men. Being tentative in leadership, however, makes females more unpopular, although that is not true of males.

Our study builds upon the still-growing literature on why females have less success in the labor market. Despite progress in areas such as education, women lag behind men, especially at senior levels (for example, in the board room, Gregory-Smith et al. 2014), and this has led to calls for new thinking (Goodall and Osterloh, 2017). Recent work by Card et al. (2016) demonstrates that females receive only 90% of the firm-specific remuneration that is earned by males.

The data set used in this paper has advantages that have been denied to most, and perhaps all, previous researchers on gender differentials. First, the individuals in our data are questioned in detail about their motives, behavior, and histories. Unlike in standard data sources, therefore, it is in principle possible -- admittedly in an imperfect way -- to inquire into ‘why’ women and men choose to act in the ways observed. Second, our data are from matched worker-employer surveys in which random samples of male and female employees can be studied. This is a valuable feature for the present inquiry. It makes it possible to control for a large number of background factors about workplaces that are not observable to the statistical investigator, and would be impossible to allow for properly in many conventional data sets. The paper’s econometric estimates are thus ‘within-employer’.

To anticipate the later results, the paper is not able to find support for the two women-don’t-ask premises, (i) and (ii), that are stated at the beginning of the paper. Instead, the evidence

is more consistent -- especially once we control for variables unavailable to prior researchers -- with the view that women ask but do not get. The data used here are fairly recent. One likely possibility, in our judgment, is that negotiating behavior in the modern era has begun to change.

Finally, special mention should be made of an early study in Great Britain (McGovern et al., 2007), which is an analysis of the Working in Britain survey, and also does not find evidence to favor a women-don't-ask view. The WiB survey requests information from workers about whether since joining their employer they have ever asked for a pay raise. In a logistic regression, the coefficient on female is negative, and fairly large, but the authors report that it is not statistically significantly different from zero. The authors can control for union membership, social class, education, and a small number of other covariates. They are not able to control for employer fixed-effects but do allow for a variable for establishment size.

3. Data

The data source used in the analysis is a statistically representative sample of all Australian employees and workplaces: the recently available Australian Workplace Relations Survey (AWRS). The data set covers the years 2013-2014. It has the distinctive feature that it asks individuals a set of questions about promotion and pay negotiation, and about their levels of satisfaction. For the later analysis, we especially focus on responses to the following:

- A. *"I have not attempted to attain a better wage/salary for myself since I commenced employment with this employer"*
- B. *"Why have you not attempted to attain a better wage/promotion for yourself since you commenced your employment? ... I'm concerned about negative effects on my relationship with my manager/employer"*
- C. *"I have successfully attained a better wage/salary for myself through negotiating with my manager/employer (i.e. without changing roles)"*

Interpretations of A and C are clearly defined. In an attempt to address earlier Idea 2 -- that women may be reluctant to ‘ask’ because it could be viewed by their manager as pushy or “out of role” behavior -- we will in this paper examine the answers to B: *“I’m concerned about negative effects on my relationship with my manager/employer”*. We draw inferences from this for two reasons. First, as the literature that is summarized above suggests, asking for a pay rise may be viewed by others as an assertive or pushy kind of action, especially in an ambiguous wage environment, and that may incur penalties for women. Second, an employee’s relationship with the boss is arguably one of the most important, as can be seen in the strong association between employee job satisfaction and boss competence (Artz et al. 2017). Thus, it may be prudent for women to be cautious about this particular relationship.

Like other nations, Australia has a gender pay gap (see Appendix C in this paper, for example). Careful modern work on the foundations of the Australian gap between males and females includes Johnston and Lee (2012).

Using these new AWRS data, Tables 1a and 1b give descriptive information about the sample. The data set offers information on approximately 4600 randomly sampled workers across 840 workplaces. We will set a dummy to equal zero if respondents agreed with "I have not attempted to attain a better wage/salary for myself since I commenced employment with this employer", and equal to one if they did not agree with the statement. This can then be treated as a dependent variable in a regression equation, with standard demographic and workplace variables included as independent variables.

It might be wondered if the method of pay-setting in Australia could be influential. Later econometric work, however, will provide ‘within-employer’ estimates when comparing males and females, so that background influences are held appropriately constant between the two genders.

In the data set, a little over half of workers are female, and the mean age of the sample is slightly under 41 years old. For 20% of the workforce, the highest educational qualification is a bachelor's degree. A further 16% of workers have further degrees. These proportions on educational attainment do not vary greatly across males and females. Just over half the sample are married, and for 86% of employees their language used at home is English. Fulltime workers make up 64% of the sample. At the mean, the number of hours worked is 37 per week.

The paper's focus is upon what happens during pay-setting. Approximately 39% of employees say, as shown in Table 1a, that they are in a job where they negotiate their salary with the company. This proportion is broadly comparable to the U.S. figure of 33% reported in Hall and Krueger (2012)². In the raw data of Table 1b, women are less likely than men to say they are in a job where they negotiate wages. The figure for males is approximately 48%; the figure for females is approximately 33%. Although the authors do not focus upon the issue of gender, Hall and Krueger report a figure of 25% for U.S. females.

In AWRS, information is also available on whether employees say they have attempted to attain a better salary since they commenced employment with the organization. Here, in Table 1b, it can be seen that 75% of males report that they have asked for a raise in pay, while 66% of females have asked. Hence, in terms of Idea 1 above, it is true as a descriptive and aggregate statement that women ask less (both when joining and when already employed by the employer), and, as a referee has pointed out, Table 1b is consistent with Leibbrandt and List, 2015). Later tables explore whether that remains true when other characteristics are held constant. Table 1b also reveals that 14.6% of males say they have not attempted to obtain a raise because of concern for their relationship with their manager/employer. A smaller number, 12.9%, of females say this.

Hence, in the raw data, there is no clear support for Idea 2, above, that women are disproportionately wary of requesting a raise in salary.

4. Regression Results

There are two main ways to ‘ask’ in a workplace. One method is to seek to be promoted at work. The other is to seek greater pay in the existing job and grade.

Table 2 begins with the issue of whether, after adjusting for other factors, there is evidence in this data set that females request promotion either more or less often than do males (in earlier work by Pergamit and Veum, 1999, it was found in NLSY data that women were promoted less often than males). The null hypothesis is taken to be that the two genders behave similarly. Table 2 thus estimates a regression equation in which there are 4582 observations on individuals who work across 840 different employers.³ The dependent variable in the regression equations of Table 2 is a one or zero when respondents in the survey answer that, with this employer, ‘I have asked for promotion’. In each of the three columns of Table 2, the coefficient on a female dummy variable is close to zero (and in two of the three columns has the wrong sign for a women-don’t-ask view). In the fullest specification, the coefficient is 0.013 with a t-statistic of 0.971. Hence it is not possible to reject the null hypothesis that women and men ask equally often for promotion. This conclusion holds in each of the three columns, where the first column includes as covariates only gender, age and age squared, whether English is the language spoken in the person’s home, and a set of employer fixed-effect dummies, and the third column includes a larger set of covariates that include the number of working hours and occupational and educational dummies. These estimates are effectively within-employer.

A second way to obtain greater pay is to get a raise in the current job. Table 3 therefore turns to the question of whether, while in their existing role, women and men say they behave

differently in their asking behavior. In this table, three dependent variables are used. These are dichotomous answers to questions on ‘My pay is negotiated’, ‘I have successfully obtained a pay raise while with the employer’, and ‘I have attempted to obtain a pay raise’. In each of these, there are three columns in the tables, and the regression equations build up to longer specifications in right-hand columns as more variables are added. The survey does not provide information on how many times people have asked; hence we treat the data as 0-1.

In each equation of Table 3, a set of employer dummies has been included. This again has the statistical advantage that a variety of background influences -- that are specific to each company but not observable to the statistical investigator -- are held constant.

Columns 3 and 6 of Table 3 reveal some differences between men and women. With a large number of other covariates included, females are less likely to say that pay is negotiated (with a coefficient of -0.060 in column 3) in the workplace; here this is a structural characteristic of the workplace, of course, and not a measure of individual asking behavior. A referee has raised the insightful puzzle of how it could be that, within a workplace in which men also work, females could say relatively less often -- than males -- that pay is not negotiated there. We do not precisely know how to answer that. However, any bias or error, if that is what it is, would act to reinforce the paper’s chief finding. Women ask for pay raises at the same rate as men even if, on average, they do not view negotiation as being so likely in their workplace.

In Table 3, females are less likely to report that they have been successful in *obtaining* a salary raise while working for the current employer (with a coefficient of -0.04 in column 6). Given the mean success rate of 0.16 in the data, this implies that women are one quarter less likely to obtain a raise. On the precise definition of ‘success’, here the zero-one dependent variable measures success in negotiating (that does not preclude eventual success in some other way such

as promotion; promotion equations were given earlier). A number of the other independent variables enter significantly in columns 3 and 6 of Table 3. Age, for example, follows a concave shape. There is evidence that individuals with higher levels of education are both more likely to be in a job with negotiation and to have been successful in negotiating a pay raise after they joined the employer. Job tenure enters, respectively, negatively in the Negotiated column and positively in the Successful column. Those employees with longer hours of work are more likely to say their pay is set by negotiation, and also more likely to say they have been successful in obtaining a salary increase.

5. Not Asking or Not Getting?

Is it true that women do not ask for pay raises? Column 9 of Table 3 sheds doubt on that⁴. The analysis uncovers no statistically significant difference between men and women in the probability of having asked. Nevertheless, unlike the earlier result on the equal rate of asking for promotion, this inference rests, importantly, upon the statistical investigator having information about the number of hours worked by each employee. Once the equation includes a variable for the number of hours worked, then the column 8 coefficient in Table 3 of -0.048 on Female, with a t-statistic of 2.566, becomes in column 9 a coefficient of -0.026, with a t-statistic of 1.420.

There is a potential concern here with Type II errors. Nevertheless, -0.026 is a small coefficient, and not merely a large one for which the null of zero cannot be rejected, so the dominant effect, in the last three columns of Table 3, is apparently coming not from being a woman per se. Instead, on closer scrutiny, the appearance of a lack of ‘asking’ is being driven statistically by working a shorter number of hours. Males who work shorter hours also ‘do not ask’.

To check more fully on whether the insignificance of gender for ‘asking’ is being caused erroneously, Table 4 explores a further permutation. Here the sample is divided into Part-timers and Full-timers, where the cut-off is defined as fewer than 38 hours⁵.

However, Table 3’s substantive conclusions continue to hold. Once again, it is not possible to reject the null hypothesis of no difference, in the ‘I Have Asked’ columns, between male workers and female workers. Column 6 of Table 4 seems of interest, because this provides a test for full-time males compared to full-time females. In column 6 of Table 4, the coefficient on the female dummy is -0.015, with a small t-statistic of 0.619. Thus again there seems no compelling evidence here that males and females behave differently. It is impossible, we stress, to be sure that Type II errors have been avoided. However, even were the point estimate to be taken at face value, the difference in the asking rate between men and women would be just one and a half percentage points. We return to this general issue at the end of the paper.

In Table 1a, nearly one third of workers said they had not attempted to get a higher wage. Among workers who never requested a pay raise, what do they give as reasons for their lack of asking? Tables 5 and 6 provide regression-equation evidence. These tables test among a variety of verbatim potential explanations that were offered to the interviewees as part of the AWRS survey. Column 3 of Table 5 documents weak evidence⁶ for the fact that women may be being influenced by the fact they are more satisfied -- than equivalently qualified men -- with their wage (consistent with results in Clark and Oswald, 1996). However, column 6 of Table 5 implies that it is not because women are relatively satisfied -- in comparison with the males answering the same question -- with their actual role in the organization.

Table 6 explores additional possibilities. It gives regression equations where, in the three columns, the dependent variables are respectively dichotomous variables for ‘I have not asked for

a salary raise because there is no process here for doing so'; 'I have not asked for a salary raise because I am concerned about negative effects on my relationship with my manager/employer'; 'I have not asked for a salary raise because my role would not be seen as worthy of a higher wage'. The female dummy is insignificantly different from zero in each of the columns of Table 6. Moreover, as before, the key coefficient here (of -0.012) is small, and not merely insignificantly different from zero. Women are apparently not being influenced by a disproportionate concern for their relationship with the boss.

6. Checks

A number of statistical checks into the results were done.

First, although the inclusion of a full set of employer dummies has advantages, it might be thought that too much statistical power is lost (because some workplaces have only one or two sampled employees). However, we verified that the omission of the 840 dummies does not alter the paper's substantive results. At the referees' suggestion, we also tested, and found no role for, employer-size interactions (see the supplementary online material).

Second, a possible cause for concern is the lack of a measure of frequency-of-times that workers have asked for a raise at their employer, or a variable for when workers began asking for raises. It might be that men ask for raises earlier and more frequently than women and that this is why men are more successful than women at eventually securing a raise. While the AWRS data do not provide full information on this issue, a suitable variable may lie in workers' tenure. If men request raises earlier and more often than women, we should find a statistically significant difference between newer (lower tenure) male and female employees in their requests for raises. A check for this was done. Appendix B presents results among workers with less than 1 year, 3 years, and 5 years of tenure – and finds no significant differences between men and women.

Third, it is relevant to inquire into potential differences across age categories. One possibility is that there might be some form of cohort effect. It could be that younger generations of employees have different attitudes to the topic of gender than did their parents.

In our data set, it is not possible to distinguish a true cohort-effect from a true age-effect. However, as in Appendix A, it is feasible to split the sample into age sub-categories. Interestingly, for workers under the age of 41, in the table of Appendix A, there appears to be no difference, in a regression-adjusted sense, between males and females in: whether they are in a job where pay is negotiated; whether they have been successful in obtaining a raise in pay if they asked for one; whether they did request such a raise.

Overall, in this sample there are differences across age-groups. The younger women in the labor market appear statistically indistinguishable -- even in 'getting' -- from the younger men. Hence it could be that negotiating behavior through the years has begun to change. Future research may be able to decide whether true cohort-effects can be detected.

Fourth, it might be thought that the women-don't-ask argument could apply to some groups rather than others. Perhaps elite men (like those in MBA classes of the sort examined in the seminal work by Babcock and Laschever, 2003 and 2009, and Babcock et al. 2006) ask more than elite women, for example. Hence we scrutinized Table 3 kinds of specifications for various sub-samples. When we split the sample by education at the median, we found no difference in the female coefficient by education of the worker. Even when, on a referee's suggestion, we split on postgraduate degrees, we did not detect significant effects.

Fifth, a further potential concern is the possible role of trade unions (as union members may feel that the union negotiates for them rather than they negotiate personally). However, because we control for employer fixed-effects, it might be hoped that that would adjust for much

of that possible influence. We also adjust for ‘awards’, which in Australia are legal documents that outline the minimum pay and conditions of employment; there are 122 industry or occupation awards in Australia. Moreover, on the suggestion of a referee, adding an additional control for the employee’s union status did not alter the key results.

Sixth, it would be interesting to validate the paper’s findings for workers who are at different points in employers’ hierarchies. Here, however, we have only limited information. Nevertheless, when we divided the sample into workers who can be classified as managers (there are 819) or not managers (there are 3763), in a Has Asked for a Pay Raise equation, the coefficients on the female dummy were again small at, respectively, 0.005 and -0.026, with large standard errors in both cases.

A range of other subsample divisions, and tests for interactions, are reported in the supplementary online material in Tables S1 to S4.

7. Conclusion

This paper, which exploits a data set that is the first of its kind, produces results that seem inconsistent with earlier findings that gender pay differences exist partially because ‘women-don’t-ask’. It is able to study two kinds of ‘asking’ equations: *asking for promotion* and *asking for pay raises* while in the current job. With the data available to us, it is not possible to reject the null hypothesis that males and females behave similarly.

It seems that, in the final columns of Table 2 and Table 3, men and women ask equally often for promotions and raises. Such a conclusion should be kept in perspective. Our paper does not claim, it should be emphasized, that males and females act identically in modern workplaces. Recent research on gender in negotiation, as just one example, has found evidence that women (as compared to men) have a stronger social motivation to hold back from negotiating

for higher pay because they are more likely to encounter backlash (Amanatullah and Morris, 2010; Amanatullah and Tinsley, 2013; Bowles, Babcock, and Lai, 2007). Other differences have been persuasively documented (Niederle and Vesterlund, 2011; Gneezy, Niederle and Rustichini, 2003).

The current paper creates within-employer estimates and uses modern data to examine two ideas. The first is that women may be reluctant to ask for higher pay (Idea 1 in the Introduction). The second is that women do not ask because it could be viewed as pushy or “out of role” behavior (Idea 2 in the Introduction), and thus may have a negative impact on their relationship with the manager/employer. There seems an important reason to do such a test. It is that the women-don’t-ask theory places part of the responsibility for the existence of gender differentials upon females themselves.

In performing the analysis, we attempt to hold constant as many other influences as is feasible. The paper is able to control for hours of work -- something that was not possible for previous researchers -- so that the comparison being made is between full-time males and full-time females, and between part-time males and part-time females. This adjustment for hours is particularly important. Once it is done, regression equations for the likelihood of ‘asking’ do not show a statistically significant difference between men and women; to put that conclusion differently, both part-time men and part-time women tend ‘not to ask’, which resonates with the results on the apparent relative diffidence of lower-status males found in Al Dabbagh, Bowles, and Thomason (2016).

In terms of ‘getting’, by contrast, column 6 of Table 3 reveals a systematic difference by gender. Females are less successful at getting (although we show in Appendix A that younger

women are apparently equally successful)⁷. Such a conclusion -- asking yet not getting -- seems a potentially important one. It demands further scrutiny in future research and other nations' data.

The study also probes human motives. It estimates equations to test whether, in considering to ask or not, females are more concerned than males about possible deleterious effects on their relationships with managers. No evidence is found for that, either, in these data.

Caveats should be noted, and they are not trivial ones. First, in this study we have had to rely on what people tell us in surveys. If, say, men have a disproportionately greater propensity to conceal the truth, then our results might, in principle, be biased in some way. It is possible that, perhaps as part of a desire to appear assertive, male workers are more likely than females to claim to have asked when they have not⁸ done so; it is also possible, as has been suggested to us by some readers, that females behave in a subconsciously more emollient way. Second, this data set is for modern Australia. If that country is unusual⁹, the findings from our study might not apply elsewhere. Appendix C, however, checks that Australia has the typical kind of gender pay gap of approximately 15%. Third, our results have concentrated on the case where hours of work are held constant. This is arguably natural, because we wish here to do a *ceteris paribus* comparison between males and females, but we have not attempted to explain the observed difference in the mean number of working hours between men and women.¹⁰ Fourth, we have assumed in our econometric estimation that women's possible fear of being perceived as pushy or "out of role" may be captured, if imperfectly, by a survey question about whether individuals are "concerned about negative effects on relationship with manager/employer". Fifth, the analysis has not been able to uncover exactly why women are paid less than men.

Finally, we would wish to caution the reader on one issue. We are cognizant of the possibility that this study's results might be subject to Type II errors. As is often the case in

statistical science, it is hard decisively to rule that out. Nevertheless, such a possibility should be seen in perspective. In the case of Table 3, the key estimated Female coefficient (of -0.026) is small and not merely insignificantly different from zero. In the fullest specification of column 6 of Table 4, in fact, it is tiny at just -0.015. Moreover, for tables such as Table 2 and Table 6, the Female coefficients (of 0.013 and -0.012, respectively) have the wrong signs to be consistent with either Idea 1 or Idea 2.

How well the paper's results apply to other nations remains to be discovered. We believe the general issues to be important ones -- for researchers and the world at large.

References

- Al Dabbagh, May, Hannah R. Bowles, and Bobbi Thomason. 2016. "Status Reinforcement in Emerging Economies: The Psychological Experience of Local Candidates Striving for Global Employment." *Organization Science*, 27(6): (Nov) 1453-1471.
- Amanatullah, Emily T., and Michael W. Morris. 2010. "Negotiating Gender Roles: Gender Differences in Assertive Negotiating are Mediated by Women's Fear of Backlash and Attenuated when Negotiating on Behalf of Others." *Journal of Personality and Social Psychology*, 98(2): (Feb) 256-267.
- Amanatullah, Emily T., and Catherine H. Tinsley. 2013. "Punishing Female Negotiators for Asserting Too Much or Not Enough: Exploring Why Advocacy Moderates Backlash Against Assertive Female Negotiators." *Organizational Behavior and Human Decision Processes*, 120(1): (Jan) 110-122.
- Artz, Ben. M., Amanda. H. Goodall, and Andrew J. Oswald. 2017. "Boss Competence and Worker Well-Being." *Industrial Labor Relations Review*, 70(2): (June) 419-450.
- Auspurg, Katrin, Thomas Hinz, and Carsten Sauer. 2017. "Why Should Women Get Less? Evidence on the Gender Pay Gap from Multifactorial Survey Experiment." *American Sociological Review*, 82: (Feb) 179-210.
- Azmat, Ghazala, and Barbara Petrongolo. 2014. "Gender and the Labour Market: What Have We Learned from Field and Lab Experiments?" *Labour Economics* 30: (Oct) 32-40.
- Babcock, Linda, Michele Gelfand, Deborah A. Small, and Heidi Stayn. 2006. "Gender Differences in the Propensity to Initiate Negotiations." In *Social Psychology and Economics* edited by David De Cremer, Marcel Zeelenberg, and J. Keith Murnighan, pp. 239-62. New Jersey: Lawrence Erlbaum Associates, Erlbaum, Mahwah.
- Babcock, Linda, and Sara Laschever. 2003. *Women Don't Ask: Negotiation and the Gender Divide*. Princeton, NJ and Oxford, UK: Princeton University Press.
- Babcock, Linda, and Sara Laschever. 2009. *Ask For It: How Women Can Use the Power of Negotiation to Get What They Really Want*. New York: Bantam Dell, Random House.
- Bear, Julia B, and Linda Babcock. 2012. "Negotiation Topic as a Moderator of Gender Differences in Negotiation." *Psychological Science*, 23(7): 743-744.
- Blau, Francine D., and Lawrence M. Kahn. 2017. "The Gender Wage Gap: Extent, Trends, and Explanations." *Journal of Economic Literature*, 55(3): (Sept) 789-865.

- Bongiorno, Renata, Paul G. Bain, and Barbara David. 2014. "If You're Going to be a Leader, at Least Act Like It! Prejudice Toward Women Who Are Tentative in Leader Roles." *British Journal of Social Psychology*, 53: (June) 217-234.
- Bowles, Hannah R., Linda Babcock, and Lei Lai. 2007. "Social Incentives for Sex Differences in the Propensity to Initiate Negotiation: Sometimes it Does Hurt to Ask." *Organizational Behavior and Human Decision Processes*, 103: (May) 84-103.
- Bowles, Hannah, R., and Kathleen L. McGinn. 2008. "Gender in Job Negotiations: A Two-Level Game." *Negotiation Journal*, 24: (Oct) 393-410.
- Card, David, Ana Rute Cardoso, and Patrick Kline. 2016. "Bargaining, Sorting, and the Gender Wage Gap: Quantifying the Impact of Firms on the Relative Pay of Women." *Quarterly Journal of Economics*, 131: (May) 633-686.
- Clark, Andrew E., and Andrew J. Oswald. 1996. "Satisfaction and Comparison Income." *Journal of Public Economics*, 61: (Sept) 359-381.
- Dar-Nimrod Ilan, and Steven J. Heine. 2006. "Exposure to Scientific Theories Affects Women's Math Performance." *Science*, (Oct) 314: 435.
- Eagly, Alice H. 1987. *Sex Differences in Social Behavior: A Social-Role Interpretation*. Hillsdale, NJ: Erlbaum.
- Eagly, Alice H., and Steven J. Karau. 2002. "Role Congruity Theory of Prejudice Toward Female Leaders." *Psychological Review*, 109(3): (July) 573- 598.
- Exley, Christine L., Murie Niederle, and Lisa Vesterlund. 2017. "Knowing When to Ask: The Cost of Leaning In." Working Paper, No. 16-115. Harvard Business School.
- Gneezy, Uri, Muriel Niederle, and Aldo Rustichini. 2003. "Performance in Competitive Environments: Gender Differences." *Quarterly Journal of Economics*, 118(3): (Aug) 1049-1074.
- Goodall, Amanda H., and Margit Osterloh. 2017. "Lack of Diversity in Leadership: Could Selective Randomness Break the Deadlock?" Working Paper, Cass Business School and University of Zurich.
- Gregory, Mary, and Sara Connolly. 2008. "Feature: The Price of Reconciliation: Part-Time Work, Families and Women's Satisfaction." *Economic Journal*, 118(526): (Feb) F1-F7.
- Gregory-Smith, Ian, Brian G.M. Main, and Charles O'Reilly. A. 2014. "Appointments, Pay, and Performance in UK Boardrooms by Gender." *Economic Journal*, 124(574): (Feb) F109-F128.

- Guenther, Christina, Neslihan Arslan Ekin, Christiane Schwier, and Martin Strobel. 2010. "Women Can't Jump? – An Experiment on Competitive Attitudes and Stereotype Threat." *Journal of Economic Behavior and Organization*, 75(3): (Sept) 395-401.
- Gupta, Vishal K., and Nachiket M. Bhawe 2007. "The Influence of Pro-Active Personality and Stereotype Threat on Women's Entrepreneurial Intentions." *Journal of Leadership and Organizational Studies*, 13: (Sept) 73-85.
- Hall, Robert E., and Alan B. Krueger. 2012. "Evidence on the Incidence of Wage Posting, Wage Bargaining, and On-The-Job Search." *American Economic Journal: Macroeconomics* 4: (Oct) 56-67.
- Heilman, Madeline E. 2001. "Description and Prescription: How Gender Stereotypes Prevent Women's Ascent up the Organizational Ladder." *Journal of Social Issues*, 57: (Winter) 657-674.
- Heilman, Madeline E., and Tyler G. Okimoto. 2007. "Why Are Women Penalized for Success at Male Tasks? The Implied Communitativity Deficit." *Journal of Applied Psychology*, 92: (Jan) 81-92.
- Inzlicht, Michael. 2011. *Stereotype Threat: Theory, Process, and Application*. Oxford: Oxford University Press.
- Johnston, David W., and Wang-Sheng Lee. 2012. "Climbing the Job Ladder: New Evidence of Gender Inequity." *Industrial Relations*, 51: (Jan) 129-151.
- Kay, Katty, and Claire Shipman. 2014. *The Confidence Code: The Science and Art of Self-Assurance – What Women Should Know*. Harper Business: New York.
- Kray, Laura J., and Michele J. Gelfand. 2009. "Relief Versus Regret: The Effect of Gender and Negotiating Norm Ambiguity on Reactions to Having One's First Offer Accepted." *Social Cognition*, 27(3): (June) 418-436.
- Leibbrandt, Andreas, and John A. List. 2015. "Do Women Avoid Salary Negotiations? Evidence from a Large-Scale Natural Field Experiment." *Management Science*, 61(9): (Sept) 2016-2024.
- Lichtenstein, Sarah, Baruch Fischhoff, and Lawrence S. Phillips. 1982. "Calibration of Probabilities: The State of the Art to 1980." In *Judgment Under Uncertainty: Heuristics and Biases* edited by Daniel Kahneman, Paul Slovic and Amos Tversky, pp. 306-334. Cambridge University Press: Cambridge.
- Mazei, Jens, Joachim Hueffmeier, Philipp A. Freund, Alice F. Stuhlmacher, Lena Bilke, and Guido Hertel. 2015. "A Meta-Analysis on Gender differences in Negotiation Outcomes and their Moderators." *Psychological Bulletin*, 141(1): (Jan) 85-104.

- McGovern, Patrick, Stephen Hill, Colin Mills, and Michael White. 2007. *Market, Class, and Employment*, Oxford: Oxford University Press. Chapter 4.
- Moore, Don A., and Deborah Small. 2007. "Error and Bias in Comparative Social Judgment: On Being Both Better and Worse Than We Think We Are." *Journal of Personality and Social Psychology*, 92(6): (June) 972–989.
- Niederle, Muriel, and Lise Vesterlund. 2007. "Do Women Shy Away from Competition? Do Men Compete Too Much?" *Quarterly Journal of Economics*, 122(3): (Aug) 1067-1101.
- Niederle, Muriel, and Lise Vesterlund. 2011. "Gender and Competition." *Annual Review of Economics*, 3: 601-630.
- Pergamit, Michael R., and Jonathan Veum. 1999. "What is a Promotion?" *Industrial and Labor Relations Review*, 52(4): (July) 581-601.
- Phelan, Julie, Corinne A. Moss-Racusin, and Laurie A. Rudman. 2008. "Competent Yet Out in the Cold: Shifting Criteria for Hiring Reflect Backlash Toward Agentic Women." *Psychology of Women Quarterly*, 32(4): (Dec) 406-413.
- Sandberg, Sheryl. 2013. *Lean In: Women, Work, and the Will to Lead*, Random House: New York.
- Schmader, Toni, and Michael Johns. 2003. "Converging Evidence that Stereotype Threat Reduces Working Memory Capacity." *Journal of Personality and Social Psychology*, 85: (Sept) 440–452.
- Spencer, Steven J., Claude M. Steele, and Diane M. Quinn. 1999. "Stereotype Threat and Women's Math Performance." *Journal of Experimental Social Psychology*, 35(1): (Jan) 4–28.
- Srivastava, Sameer B., and Eliot L. Sherman. 2015. "Agents of Change or Cogs in the Machine? Reexamining the Influence of Female Managers on the Gender Wage Gap." *American Journal of Sociology*, 120: (May) 177–1808.
- Zerres, Alfred, Joachim Hüffmeier, Philipp A. Freund, Klaus Backhaus, and Guido Hertel. 2013. "Does it Take Two to Tango? Longitudinal Effects of Unilateral and Bilateral Integrative Negotiation Training." *Journal of Applied Psychology*, 98: (May) 478–491.

Table 1A: Descriptive statistics (AWRS data 2013-2014)

Number of observations: 4582 employees across 840 employers

<u>Variable</u>	<u>Description</u>	<i>Whole sample</i>	
		<u>Mean</u>	<u>SD</u>
Age	Age of worker in years	40.374	12.506
Age squared	Age of worker squared	1,786.403	1,049.501
Female	= 1 if worker is female and 0 if male	0.576	0.494
Married	= 1 if married and 0 if not	0.519	0.500
Dependents	= 1 if worker has children 15 or younger; 0 if not	0.327	0.469
Secondary	= 1 if completed secondary education; 0 if not	0.241	0.428
Certificate	= 1 if completed certificate education; 0 if not	0.254	0.435
Diploma	= 1 if completed diploma education; 0 if not	0.147	0.354
Bachelor degree	= 1 if completed bachelor education; 0 if not	0.201	0.401
Graduate	= 1 if completed graduate education; 0 if not	0.064	0.244
Post-graduate	= 1 if completed postgraduate education; 0 if not	0.093	0.291
Employer tenure	Length of time spent with employer in years	5.808	6.039
Weekly hours worked	Usual weekly hours worked	37.154	10.882
Part time job	= 1 if weekly hours worked is less than 38; 0 if not	0.359	0.480
Pay is negotiated	= 1 if salary is a “negotiated amount with employer” and 0 otherwise	0.389	0.488
Successful	= 1 if “successfully attained a better wage/salary through negotiating with the manager/employer (without changing roles) and 0 if not	0.160	0.367
Has asked for raise	= 1 if “attempted to attain a better wage/salary since commencing employment with this employer” and 0 otherwise	0.696	0.460
Has asked for promotion	= 1 if “attempted to get a promotion” and 0 otherwise	0.891	0.312
Satisfied with wage	= 1 if “satisfied with wage/salary” and 0 otherwise	0.338	0.473
No process	= 1 if “there is no process/procedure to be able to access a better wage to perform role” and 0 otherwise	0.213	0.410
Concerned about relationships	= 1 if “concerned about negative effects on relationship with manager/employer” and 0 otherwise	0.136	0.342
Role not worthy	= 1 if “role wouldn’t be seen by manager/employer as worthy of a higher wage” and 0 otherwise	0.150	0.357
Satisfied in role	= 1 if “satisfied in role” and 0 otherwise	0.235	0.424

Table 1B: Gender sub-sample statistics (AWRS 2013-2014)

<u>Variable</u>	<i>Males</i>		<i>Females</i>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Age	41.124	12.393	39.820	12.561
Age squared	1,844.738	1,061.886	1,743.376	1,038.375
English	0.852	0.355	0.866	0.341
Married	0.579	0.494	0.475	0.499
Dependents	0.369	0.483	0.297	0.457
Secondary	0.245	0.430	0.238	0.426
Certificate	0.270	0.444	0.242	0.429
Diploma	0.136	0.343	0.155	0.362
Bachelor degree	0.192	0.394	0.208	0.406
Graduate	0.059	0.236	0.067	0.250
Post-graduate	0.098	0.298	0.089	0.286
Employer tenure	6.107	6.335	5.588	5.802
Part time job	0.174	0.379	0.496	0.500
Weekly hours worked	41.602	9.862	33.873	10.426
‘Pay is negotiated’	0.477	0.500	0.325	0.468
‘Successful since joining’	0.200	0.400	0.131	0.337
‘I have asked for pay raise’	0.745	0.436	0.660	0.474
‘I have asked for promotion’	0.902	0.298	0.883	0.322
‘Satisfied with wage’	0.361	0.481	0.324	0.468
‘No process’	0.182	0.387	0.231	0.422
‘Concerned about relationships’	0.146	0.354	0.129	0.336
‘Role not worthy’	0.160	0.367	0.144	0.352
‘Satisfied in role’	0.251	0.434	0.225	0.418

The variable ‘*pay is negotiated*’ is a dummy for whether the employee says that pay levels are fixed by negotiation with the employer (this is not, it should perhaps be emphasized, a measure of ‘asking’). ‘*Successful since joining*’ is a dummy for having attained a higher salary during this job tenure with the current employer. ‘*I have asked for pay raise*’ is a dummy for having requested a greater salary during this job tenure with the current employer. ‘*I have asked for promotion*’ is a dummy for having requested a promotion with the current employer. ‘*Satisfied with wage*’ is a dummy for reporting that I am satisfied with my income in the job with the current employer. ‘*No process*’ is a dummy for reporting that there is no process in this job for obtaining a higher salary. ‘*Concerned about relationships*’ is a dummy for answering yes to “Why have you not attempted to attain a higher salary... I’m concerned about negative effects on my relationship with my manager/employer.” ‘*Role not worthy*’ is a dummy for answering yes to “Why have you not attempted to attain a higher salary... My role wouldn’t be seen by my manager/employer as worthy of a higher wage.” ‘*Satisfied in role*’ is a dummy for answering yes to “Why have you not attempted to attain a higher salary... I am satisfied in my role.”

Table 2: Regression Equations for I Have Asked for a Promotion (AWRS 2013-2014).
Includes a Full Set of 840 Employer-Dummy Variables.

	I have asked for a promotion		
	(1)	(2)	(3)
Female	-0.008 (-0.717)	0.003 (0.199)	0.013 (0.971)
Age	0.015*** (4.698)	0.011*** (3.341)	0.010*** (3.019)
Age squared	-1.6x10 ⁻⁴ *** (-4.259)	-1.3x10 ⁻⁴ *** (-3.263)	-1.2x10 ⁻⁴ *** (-2.896)
English	-0.003 (-0.206)	-0.014 (-0.877)	-0.017 (-1.067)
Married		1.8x10 ⁻⁴ (0.014)	0.001 (0.108)
Dependents		-0.004 (-0.297)	0.002 (0.167)
Certificate		0.022 (1.581)	0.019 (1.389)
Diploma		0.016 (0.912)	0.016 (0.937)
Bachelor degree		-0.008 (-0.449)	-0.007 (-0.374)
Graduate		0.000 (0.007)	-0.002 (-0.068)
Post-graduate		-0.023 (-0.981)	-0.024 (-1.035)
Employer tenure		0.004*** (4.932)	0.004*** (4.741)
Weekly hours worked			0.002*** (3.803)
Occupational dummies	No	Yes	Yes
Constant	0.573*** (8.623)	0.737*** (9.970)	0.652*** (8.480)
R ²	0.014	0.040	0.047

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. All estimations consist of 4582 observations. Standard errors are clustered by employer.

Table 3: Regression Equations for My Pay is Negotiated, I Have Been Successful in Negotiating Since Joining, and I Have Asked for a Pay Raise (AWRS 2013-2014). Includes a Full Set of 840 Employer-Dummy Variables.

	Pay is negotiated			Successful since joining			I have asked		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Female	-0.092*** (-5.502)	-0.072*** (-4.328)	-0.060*** (-3.471)	-0.056*** (-3.988)	-0.049*** (-3.198)	-0.040*** (-2.598)	-0.068*** (-3.776)	-0.048*** (-2.566)	-0.026 (-1.420)
Age	0.028*** (7.301)	0.016*** (3.798)	0.015*** (3.504)	0.011*** (3.526)	0.006** (1.572)	0.005* (1.318)	0.021*** (5.173)	0.013*** (2.727)	0.011*** (2.302)
Age squared	-2.9x10 ⁻⁴ *** (-6.480)	-1.4x10 ⁻⁴ *** (-2.957)	-1.2x10 ⁻⁴ *** (-2.618)	-1.1x10 ⁻⁴ *** (-2.821)	-6.5x10 ⁻⁵ ** (-1.472)	-5.3x10 ⁻⁵ (-1.196)	-2.4x10 ⁻⁴ *** (-5.028)	-1.9x10 ⁻⁴ *** (-3.455)	-1.6x10 ⁻⁴ *** (-2.994)
English	0.031 (1.506)	0.043** (2.080)	0.040** (1.899)	-0.011 (-0.605)	-0.006 (-0.330)	-0.009 (-0.468)	0.018 (0.726)	-0.003 (-0.126)	-0.009 (-0.369)
Married		0.016 (0.983)	0.017 (1.072)		0.033 (2.452)	0.034 (2.529)		0.003 (0.157)	0.005 (0.299)
Dependents		0.034 (1.951)	0.041** (2.350)		-0.014 (-0.935)	-0.009 (-0.578)		-0.027 (-1.415)	-0.015 (-0.778)
Certificate		-0.015 (-0.713)	-0.018* (-0.864)		-0.001 (-0.057)	-0.003 (-0.188)		0.048*** (2.258)	0.043** (2.022)
Diploma		0.011 (0.447)	0.011 (0.465)		0.026 (1.238)	0.026 (1.256)		0.032* (1.306)	0.033** (1.347)
Bachelor degree		0.078*** (3.221)	0.080*** (3.300)		0.054* (2.558)	0.055* (2.610)		0.038 (1.457)	0.040 (1.556)
Graduate		0.075 (2.350)	0.072 (2.297)		0.049* (1.745)	0.047* (1.687)		0.023 (0.718)	0.020 (0.609)
Post-graduate		0.053* (1.798)	0.052* (1.755)		0.062* (2.339)	0.061 (2.297)		0.025 (0.778)	0.022 (0.699)
Employer tenure		-0.004*** (-2.723)	-0.004*** (-2.876)		0.008*** (6.049)	0.008*** (5.914)		0.022*** (15.284)	0.021*** (15.103)
Weekly hours worked			0.003*** (5.510)			0.002*** (3.412)			0.004*** (7.050)

Occupational dummies	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Constant	-0.205**	0.224***	0.123***	-0.061	-2.6x10 ⁻⁴	-0.073	0.696***	0.498***	0.664***
	(-2.468)	(2.209)	(1.149)	(-0.921)	(-0.003)	(-0.819)	(8.140)	(5.215)	(6.498)
R ²	0.032	0.128	0.137	0.014	0.043	0.046	0.020	0.103	0.114

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. All estimations consist of 4582 observations. Standard errors are clustered by employer.

Table 4: Part-time and Full-time Subsamples: Regression Equations for My Pay is Negotiated, I Have Been Successful in Negotiating Since Joining, and I Have Asked for a Pay Raise (AWRS 2013-2014). Includes a Full Set of 840 Employer-Dummy Variables.

	Pay is negotiated		Successful since joining		I have asked	
	Part-time (1)	Full-time (2)	Part-time (3)	Full-time (4)	Part-time (5)	Full-time (6)
Female	-0.023 (-0.624)	-0.051** (-2.387)	0.039 (1.374)	-0.053** (-2.396)	-0.026 (-0.608)	-0.015 (-0.619)
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes
Job controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.058 (0.242)	0.172 (1.259)	0.340 (1.430)	-0.198* (-1.748)	-0.181 (-0.926)	-0.625*** (-4.817)
R ²	0.090	0.111	0.046	0.033	0.073	0.101
Observations	1646	2936	1646	2936	1646	2936

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer.

Demographic and job controls are as listed in Table 3.

Part-time here is defined as < 38 hours per week.

Table 5: Regression Equations for the Reasons that I Did Not Ask for a Pay Raise: (i) I Am Satisfied with My Wage and (ii) I Am Satisfied with My Role (AWRS 2013-2014). Includes a Full Set of 641 Employer-Dummy Variables.

	Satisfied with wage			Satisfied in role		
	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.070** (2.116)	0.095** (2.502)	0.072* (1.844)	-0.024 (-1.073)	-0.070** (-2.059)	-0.093*** (-2.665)
Age	-0.010 (-1.174)	-0.009 (-0.913)	-0.007 (-0.759)	-0.012** (-2.411)	-0.009 (-1.043)	-0.008 (-0.878)
Age squared	1.5x10 ⁻⁴ (1.545)	1.5x10 ⁻⁴ (1.316)	1.3x10 ⁻⁴ (1.123)	1.7x10 ⁻⁴ *** (2.945)	1.4x10 ⁻⁴ (1.310)	1.1x10 ⁻⁴ (1.099)
English	0.085* (1.951)	0.074 (1.612)	0.075 (1.636)	0.049 (1.619)	0.075* (1.766)	0.075* (1.812)
Married		-0.025 (-0.720)	-0.022 (-0.635)		0.050 (1.543)	0.052* (1.651)
Dependents		-0.003 (-0.067)	-0.025 (-0.620)		-0.008 (-0.213)	-0.031 (-0.809)
Certificate		-0.009 (-0.216)	-0.006 (-0.132)		-0.008 (-0.188)	-0.004 (-0.104)
Diploma		-0.025 (-0.437)	-0.031 (-0.546)		0.029 (0.585)	0.023 (0.460)
Bachelor degree		0.013 (0.259)	0.013 (0.259)		0.023 (0.489)	0.023 (0.497)
Graduate		-0.117* (-1.685)	-0.111 (-1.583)		0.078 (1.102)	0.084 (1.185)
Post-graduate		-0.028 (-0.427)	-0.025 (-0.375)		-0.059 (-1.018)	-0.055 (-0.956)
Employer tenure		-0.001 (-0.231)	-0.001 (-0.148)		0.002 (0.581)	0.002 (0.675)
Weekly hours worked			-0.005*** (-2.858)			-0.005*** (-3.095)
Occupational dummies	No	Yes	Yes	No	Yes	Yes
Constant	0.336** (2.049)	0.650*** (2.691)	0.862*** (3.447)	0.374*** (3.732)	0.114 (0.549)	0.327 (1.485)
R2	0.010	0.021	0.026	0.015	0.027	0.037

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. All estimations consist of 1593 observations. Standard errors are clustered by employer.

Table 6: Regression Equations for the Reasons that I Did Not Ask for a Pay Raise: (iii) There is No Process Here, (iv) I Am Concerned about My Relationships, (v) My Role is not Worthy of Higher Pay (AWRS 2013-2014). Includes a Full Set of 641 Employer-Dummy Variables.

	No process	Concerned about relationships	Role not worthy
	(1)	(2)	(3)
Female	-0.053 (-1.546)	-0.012 (-0.397)	-0.015 (-0.429)
Demographic controls	Yes	Yes	Yes
Job Controls	Yes	Yes	Yes
Constant	0.158 (0.883)	0.090 (0.573)	-0.042 (-0.248)
R ²	0.030	0.024	0.030

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. All estimations consist of 1593 observations. Standard errors are clustered by employer.

APPENDIX

Appendix A: Estimations by Age Sub-Samples (AWRS 2013-2014). Full Set of 840 Employer-Dummies Included.

	Pay is negotiated		Successful since joining		I have asked	
	Age<41	Age>40	Age<41	Age>40	Age<41	Age>40
Female	-0.008 (-0.329)	-0.123*** (-4.100)	-0.019 (-0.875)	-0.077*** (-2.912)	-0.041 (-1.445)	0.009 (0.335)
English	0.033 (1.000)	0.033 (1.022)	0.024 (0.907)	-0.078** (-2.343)	-0.003 (-0.093)	0.008 (0.190)
Married	0.032 (1.187)	0.011 (0.504)	0.031 (1.314)	0.033 (1.606)	0.058** (2.145)	-0.043* (-1.815)
Dependents	0.068** (2.427)	0.029 (1.255)	-0.004 (-0.170)	-0.015 (-0.691)	-0.060** (-2.115)	0.011 (0.434)
Certificate	0.021 (0.695)	-0.042 (-1.446)	0.006 (0.228)	-0.036 (-1.320)	0.049 (1.481)	0.040 (1.217)
Diploma	0.039 (1.029)	-0.019 (-0.568)	0.009 (0.265)	0.039 (1.167)	-0.016 (-0.402)	0.080** (2.089)
Bachelor degree	0.081** (2.325)	0.086** (2.557)	0.055* (1.761)	0.045 (1.309)	0.038 (1.039)	0.085** (2.074)
Graduate	0.040 (0.743)	0.094** (1.960)	0.027 (0.673)	0.056 (1.224)	0.041 (0.787)	0.040 (0.862)
Post-graduate	0.020 (0.463)	0.088* (1.916)	0.066 (1.600)	0.065 (1.541)	0.052 (1.034)	0.046 (0.928)
Employer tenure	-0.003 (-0.940)	-0.002 (-1.544)	0.016*** (5.646)	0.005*** (3.408)	0.041*** (11.411)	0.015*** (8.872)
Weekly hours worked	0.004*** (2.787)	0.001 (1.041)	0.002* (1.681)	0.002** (2.065)	0.004*** (3.321)	0.007*** (4.873)
Occupational dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.442*** (3.974)	0.592*** (6.362)	0.012 (0.125)	0.105 (1.328)	0.428*** (4.006)	0.354*** (3.971)
R ²	0.112	0.160	0.048	0.043	0.130	0.107
Observations	2370	2212	2370	2212	2370	2212

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer.

Appendix B: Estimations for I Have Asked for a Pay Raise by Tenure Sub-Samples (AWRS 2013-2014). Includes a Full Set of 840 Employer-Dummy Variables.

	I have asked for a pay raise		
	Tenure<1 year	Tenure<3 years	Tenure<5 years
Female	-0.047 (-0.419)	-0.017 (-0.466)	-0.010 (-0.326)
Age	0.015 (0.510)	0.009 (0.931)	0.015** (2.052)
Age squared	-2.7x10 ⁻⁴ (-0.718)	-1.4x10 ⁻⁴ (-1.198)	-2.2x10 ⁻⁴ ** (-2.328)
English	0.088 (0.607)	-0.050 (-1.241)	-0.027 (-0.813)
Married	0.107 (1.081)	0.017 (0.500)	0.015 (0.575)
Dependents	-0.120 (-1.401)	-0.063* (-1.680)	-0.055* (-1.867)
Certificate	-0.007 (-0.067)	0.057 (1.328)	0.053 (1.564)
Diploma	-0.105 (-0.675)	0.029 (0.566)	0.048 (1.178)
Bachelor degree	0.270*** (3.066)	-0.021 (-0.437)	0.033 (0.837)
Graduate	0.252** (2.066)	0.020 (0.334)	0.040 (0.780)
Post-graduate	0.489** (2.482)	0.014 (0.246)	0.037 (0.739)
Weekly hours worked	0.001 (0.183)	0.003* (1.779)	0.003** (2.209)
Occupational dummies	Yes	Yes	Yes
Constant	1.171* (1.822)	0.422* (1.945)	0.365** (2.184)
R ²	0.032	0.049	0.054
Observations	413	1976	2687

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer.

Appendix C: Log-Wage Estimations (AWRS 2013-2014). Includes a full set of Employer-Dummy Variables.

	(1)	(2)	(3)
Female	-0.385*** (-10.878)	-0.289*** (-6.976)	-0.147*** (-3.708)
Age	0.062*** (7.912)	0.051*** (5.942)	0.038*** (4.700)
Age squared	-6.9x10 ⁻⁴ *** (-7.464)	-5.8x10 ⁻⁴ *** (-5.818)	-4.1x10 ⁻⁴ *** (-4.381)
English	-0.015 (-0.253)	-0.016 (-0.280)	-0.056 (-0.976)
Married		-0.029 (-0.865)	-0.014 (-0.419)
Dependents		-0.070* (-1.933)	0.010 (0.302)
Certificate		0.068 (1.587)	0.037 (0.914)
Diploma		0.014 (0.263)	0.017 (0.332)
Bachelor degree		0.156*** (2.989)	0.173*** (3.497)
Graduate		0.115 (1.427)	0.091 (1.192)
Post-graduate		0.274*** (3.677)	0.261*** (3.742)
Employer Tenure		0.009*** (3.287)	0.007** (2.575)
Weekly hours worked			0.030*** (15.134)
Occupational dummies	No	Yes	Yes
Constant	4.322*** (25.563)	4.888*** (24.036)	3.755*** (18.259)
R ²	0.075	0.175	0.272
Observations	4467	4467	4467

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer.

Appendix D: Extracts from the Questionnaire Wording in the AWRS Survey

Method of Setting Pay

C1 How is your wage/salary determined?

Please select one response only

CODE FRAMES	MOSP
Negotiated amount with my employer	1
By an enterprise agreement (EBA)	2
By an award (i.e. the relevant pay rate contained in the award, and no more)	3
My employer offered me an amount that was more than the award/standard rate, and I accepted	4
Other (<i>Please specify</i>)	990
Don't know	997

Salary Negotiations (After Commencement)

C2 Which of the following best describes the actions you have taken in relation to your wage/salary since you commenced your employment with your employer?

Please select all that apply

[PROGRAMMER: A RESPONDENT CAN'T BE CODE 7 IF THEY ARE CODE 4, AND CAN'T BE CODE 6 IF THEY ARE CODES 2, 3 OR 5]

CODE FRAMES	SALNEG1
I received a better wage/salary without pursuing it	1
I have successfully attained a better wage/salary for myself through a promotion	2
I have successfully attained a better wage/salary for myself through negotiating with my manager/employer (i.e. without changing roles)	3
I have attempted to attain a better wage/salary for myself though applying for a promotion , but have been unsuccessful	4
I have attempted to attain a better wage/salary for myself in my role, but was unsuccessful (e.g. request refused or ignored)	5
I have not attempted to attain a better wage/salary for myself since I commenced employment with this employer	6
I have not attempted to get a promotion	7
Prefer not to say	998

Why No Salary Negotiations

[ASK IF C2 (SALNEG) = CODE 6 OR CODE 7]

C2a Why **have you not** attempted to attain a better wage/promotion for yourself since you commenced your employment?

Please select all that apply

CODE FRAMES	SALNEG2
I'm satisfied with my wage/salary	1
There is no process/procedure to be able to access a better wage to perform my role	2
I'm concerned about negative effects on my relationship with my manager/employer	3
My role wouldn't be seen by my manager/employer as worthy of a higher wage	4
I am satisfied in my role	5
Other (<i>Please specify</i>)	990
Prefer not to say	998

Supplementary Online Tables for Reviewers

Table S1: Enterprise-Size Subsamples: Regression Equations for I Have Been Successful in Negotiating Since Joining and I Have Asked for a Pay Raise (AWRS 2013-2014). Includes a Full Set of 840 Employer-Dummy Variables.

	Successful since joining		I have asked	
	<i>Big enterprise</i>	<i>Small enterprise</i>	<i>Big enterprise</i>	<i>Small enterprise</i>
	(1)	(2)	(3)	(4)
Female	-0.015	-0.050***	-0.012	-0.028
	(-0.529)	(-2.648)	(-0.347)	(-1.262)
Demographic controls	Yes	Yes	Yes	Yes
Job controls	Yes	Yes	Yes	Yes
Constant	-0.045	-0.070	0.388*	0.338***
	(-0.295)	(-0.649)	(1.907)	(2.853)
R ²	0.069	0.046	0.125	0.125
Observations	1189	3393	1189	3393

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer. Small enterprises have between 5 and 99 employees while big enterprise have more than 99 employees. Demographic and job controls are as listed in Table 3.

Table S2: Regression Equations for My Pay is Negotiated, I Have Been Successful in Negotiating Since Joining and I Have Asked for a Pay Raise (AWRS 2013-2014). These incorporate interactions with age and tenure. Includes a Full Set of 840 Employer-Dummy Variables.

	Pay is negotiated	Successful since joining	I have asked	
	(1)	(2)	(3)	(4)
Female	-0.043 (-0.296)	0.186 (1.485)	-0.081 (-0.490)	-0.015 (-0.586)
Age	0.015** (2.329)	0.012** (2.047)	0.009 (1.379)	0.011** (2.347)
Age squared	-1.12 x 10 ⁻⁴ (-1.533)	-1.20 x 10 ⁻⁴ * (-1.786)	-1.62 x 10 ⁻⁴ ** (-2.075)	-1.68 x 10 ⁻⁴ *** (-3.036)
Female * Age	0.002 (0.243)	-0.010 (-1.515)	0.001 (0.093)	
Female * Age squared	-4.95 x 10 ⁻⁵ (-0.586)	9.57 x 10 ⁻⁵ (1.219)	1.35 x 10 ⁻⁵ (0.138)	
Tenure	-0.004*** (-2.872)	0.008*** (5.919)	0.021*** (15.100)	0.022*** (12.721)
Female * Tenure				-0.002 (-0.866)
Demographic controls	Yes	Yes	Yes	Yes
Job controls	Yes	Yes	Yes	Yes
Constant	0.091 (0.632)	-0.222* (-1.855)	0.385*** (2.797)	0.325*** (3.147)
R ²	0.069	0.047	0.114	0.114
Observations	4582	4582	4582	4582

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer. Demographic and job controls are as listed in Table 3.

Table S3: Regression Equations for I Have Been Successful in Negotiating Since Joining and I Have Asked for a Pay Raise (AWRS 2013-2014). Includes a Full Set of 840 Employer-Dummy Variables.

	Successful since joining			I have asked	
	(1)[#]	(2)	(3)	(4)	(5)
Female	-0.054** (-2.446)	-0.056*** (-2.900)	-0.049*** (-2.832)	-0.014 (-0.669)	-0.031 (-1.520)
Part time		-0.062*** (-2.614)		-0.080*** (-2.663)	
Female * Part time		0.045 (1.563)		-0.028 (-0.798)	
Dependents	-0.020 (-1.084)	-0.006 (-0.449)	-0.019 (-0.938)	0.022 (1.293)	-0.000 (-0.021)
Female * Dependents			0.029 (1.166)		0.039 (1.255)
Demographic controls	Yes	Yes	Yes	Yes	
Job controls	Yes	Yes	Yes	Yes	
Constant	0.042 (0.561)	0.117** (2.346)	0.020 (0.359)	0.656*** (13.692)	0.440*** (7.284)
R ²	0.035	0.045	0.045	0.102	0.107
Observations	3190	4582	4582	4582	4582

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer. Demographic and job controls are as listed in Table 3.
[#]: Sub-sample consists of only those who have asked for a raise.

Table S4: Education Subsamples by Post-Graduate Status: Regression Equations for I Have Been Successful in Negotiating Since Joining and I Have Asked for a Pay Raise (AWRS 2013-2014). Includes a Full Set of 840 Employer-Dummy Variables.

	Successful since joining		I have asked	
	<i>Post-graduate</i>	<i>Non post-graduate</i>	<i>Post-graduate</i>	<i>Non post-graduate</i>
	(1)	(2)	(3)	(4)
Female	-0.038 (-0.935)	-0.042** (-2.300)	0.076 (1.290)	-0.014 (-0.674)
Demographic controls	Yes	Yes	Yes	Yes
Job controls	Yes	Yes	Yes	Yes
Constant	0.065 (0.399)	0.113* (1.866)	0.057 (0.275)	0.520*** (8.072)
R ²	0.033	0.045	0.090	0.108
Observations	718	3864	718	3864

T-statistics are in parentheses. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. Standard errors are clustered by employer. Demographic and job controls are as listed in Table 3.

‡ The authors' affiliations are, respectively, University of Wisconsin at Oshkosh; Cass Business School, City, University of London, and IZA Bonn; University of Warwick, CAGE Research Centre, and IZA Bonn.

ENDNOTES

¹ For statements of the latest evidence, see Azmat and Petrongolo (2014) and Blau and Kahn (2017). Srivastava and Sherman (2015) find that having a female manager does little to close the gender gap. New evidence from Auspurg, Hinz and Sauer (2017) points to the role of perceptions of ‘fairness’.

² As in Table 3 of Hall and Krueger (2012).

³ Here, and in later tables, linear probability models are used (probit-equation versions give the same results).

⁴ The dependent variable is a zero-one. We exclude from our ‘zero’ category those who did not ask for a raise directly but who did so indirectly in that they asked (unsuccessfully) for a promotion. There were only 2 people in this category; including them makes no difference to our estimates.

⁵ The AWRS survey itself defines the cutoff between part-time and full-time work in Australia to be 38 hours per week. This leads to the potentially anomalous feature that workers doing, say, 36 hours or 37 hours are counted as part-timers. As a robustness check, however, we tried alternate cutoffs of 35 hours and 40 hours, and found no qualitative differences in the results.

⁶ We describe this as ‘weak’ because in column 3 of Table 5 the t-statistic on 0.072 is 1.844.

⁷ In the case of probability of promotion success, however, we found no statistically significant difference.

⁸ The authors of the paper would like to record that they are not persuaded about this; it is listed here only as a conceptual possibility. Moreover, this kind of bias would lead to an under-estimate, not over-estimate, of women’s rate of asking. It should perhaps also be noted -- in response to a referee query -- that women are asking as often as men even if they say more often than men that pay is non-negotiable in the workplace.

⁹ However, as stressed earlier, the statistical estimates are made ‘within-employer’, so males and females are being compared in a consistent way. This greatly reduces potential concerns about the role of the national pay system.

¹⁰ These differences in working hours presumably stem in part from historical and sociological differences in the gender roles. See also the ideas in Gregory and Connolly (2008).